

CLAIMS

What is claimed is:

1. A semiconductor device, comprising:

a rectangle-shaped carrier substrate which has a first region including two sides adjacent to each other, and a second region which adjoins the first region with one diagonal line as a border and whose shape is symmetrical with respect to the first region;

a semiconductor chip mounted on the carrier substrate;

a first protruding electrode group arranged in an L-shape along the two sides of the first region; and

a second protruding electrode group arranged on the second region so as to be asymmetrical with the arrangement of the first protruding electrode group.

2. A semiconductor device, comprising:

a rectangle-shaped carrier substrate;

a semiconductor chip mounted on the carrier substrate;

a region without a protruding electrode that is provided along at least two sides which intersect at a first vertex of the carrier substrate; and

a protruding electrode group which is provided along at least two sides which intersect at a second vertex of the carrier substrate opposite the first vertex.

3. A semiconductor device, comprising:

a rectangle-shaped carrier substrate;
a semiconductor chip mounted on the carrier substrate;
a region without a protruding electrode which is provided along at least a first side of the carrier substrate; and

a protruding electrode group which is provided along a second side of the carrier substrate opposite the first side, and along at least a third side which intersects the second side.

4. The semiconductor device according to claim 3, wherein the protruding electrode group is arranged in a U-shape.

5. A semiconductor device, comprising:
a carrier substrate; and
a protruding electrode arranged on the carrier substrate, excluded from a region where a semiconductor chip is mounted so as to be arranged to be overlapped by an end of the carrier substrate.

6. A semiconductor device, comprising:
a carrier substrate;
a semiconductor chip mounted on the carrier substrate;
a plurality of land electrodes formed on the carrier substrate; and
a protruding electrode arranged on a part of the plurality of land electrodes.

7. A semiconductor device, comprising:

a first carrier substrate;

a first semiconductor chip mounted on the first carrier substrate;

a rectangle-shaped second carrier substrate;

a second semiconductor chip mounted on the second carrier substrate;

a region without a protruding electrode that is provided along at least two sides which intersect at a first vertex of the second carrier substrate; and

a protruding electrode group which is provided along at least two sides which intersect at a second vertex of the second carrier substrate opposite the first vertex, and which is bonded to the first carrier substrate so as to arrange the first semiconductor chip under the region without a protruding electrode.

8. A semiconductor device, comprising:

a first carrier substrate;

a first semiconductor chip mounted on the first carrier substrate;

a rectangle-shaped second carrier substrate;

a second semiconductor chip mounted on the second carrier substrate;

a region without a protruding electrode which is provided along at least a first side of the second carrier substrate; and

a protruding electrode group which is provided along a second side of the second carrier substrate opposite the first side, and along at least a third side which intersects the second side, and which is bonded to the first carrier substrate so as to arrange the first semiconductor chip under the region without a protruding electrode.

9. A semiconductor device, comprising:

- a first carrier substrate;
- a first semiconductor chip mounted on the first carrier substrate,
- a rectangle-shaped second semiconductor chip;
- a region without a protruding electrode that is provided along at least two sides which intersect at a first vertex of the second semiconductor chip; and
- a protruding electrode group which is provided along at least two sides which intersect at a second vertex of the second semiconductor chip opposite the first vertex, and which is bonded to the first carrier substrate so as to arrange the first semiconductor chip under the region without a protruding electrode.

10. A semiconductor device, comprising:

- a first carrier substrate;
- a first semiconductor chip mounted on the first carrier substrate,
- a rectangle-shaped second semiconductor chip;
- a region without a protruding electrode which is provided along at least a first side of the second semiconductor chip; and
- a protruding electrode group which is provided along a second side of the second semiconductor chip opposite the first side, and along at least a third side which intersects the second side, and which is bonded to the first carrier substrate so as to arrange the first semiconductor chip under the region without a protruding electrode.

11. An electronic device, comprising:

a first carrier substrate;

a first electronic component mounted on the first carrier substrate;

a rectangle-shaped second carrier substrate;

a second electronic component mounted on the second carrier substrate;

a region without a protruding electrode that is provided along at least two sides which intersect at a first vertex of the second carrier substrate; and

a protruding electrode group which is provided along at least two sides which intersect at a second vertex of the second carrier substrate opposite the first vertex, and which is bonded to the first carrier substrate so as to arrange the first electronic component under the region without a protruding electrode.

12. An electronic device, comprising:

a first carrier substrate;

a first electronic component mounted on the first carrier substrate;

a rectangle-shaped second carrier substrate;

a second electronic component mounted on the second carrier substrate;

a region without a protruding electrode which is provided along at least a first side of the second carrier substrate; and

a protruding electrode group which is provided along a second side of the second carrier substrate opposite the first side, and along at least a third

side which intersects the second side, and which is bonded to the first carrier substrate so as to arrange the first electronic component under the region without a protruding electrode.

13. Electronic equipment, comprising:

a first carrier substrate;

a first semiconductor chip mounted on the first carrier substrate;

a rectangle-shaped second carrier substrate;

a second semiconductor chip mounted on the second carrier substrate;

a region without a protruding electrode that is provided along at least two sides which intersect at a first vertex of the second carrier substrate;

a protruding electrode group which is provided along at least two sides which intersect at a second vertex of the second carrier substrate opposite the first vertex, and which is bonded to the first carrier substrate so as to arrange the first semiconductor chip under the region without a protruding electrode; and

a motherboard where the first carrier substrate is mounted.

14. Electronic equipment, comprising:

a first carrier substrate;

a first semiconductor chip mounted on the first carrier substrate;

a rectangle-shaped second carrier substrate;

a second semiconductor chip mounted on the second carrier substrate;

a region without a protruding electrode which is provided along at least a first side of the second carrier substrate;

a protruding electrode group which is provided along a second side of the second carrier substrate opposite the first side, and along at least a third side which intersects the second side, and which is bonded to the first carrier substrate so as to arrange the first semiconductor chip under the region without a protruding electrode; and

a motherboard where the first carrier substrate is mounted.

15. A method of manufacturing a semiconductor device, comprising:

mounting a first semiconductor chip on a first carrier substrate;

mounting a second semiconductor chip on a second carrier substrate;

forming a protruding electrode group on the second carrier substrate while avoiding the periphery of at least one side of the second carrier substrate; and

bonding the protruding electrode group to the first carrier substrate so as to arrange the at least one side of the second carrier substrate on or above the first semiconductor chip.

16. A method of manufacturing a semiconductor device, comprising:

mounting a first semiconductor chip on a first carrier substrate;

mounting a second semiconductor chip on a second carrier substrate;

forming a protruding electrode group on the second carrier substrate while avoiding the periphery of at least one vertex of the second carrier substrate; and

bonding the protruding electrode group to the first carrier substrate so as to arrange the at least one vertex of the second carrier substrate on or above the first semiconductor chip.